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## PEN TYPE TEAR GAS GUN

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5 Claims. (Cl. 42—1)

This invention relates to discharging devices for tear gas cartridges, bombs, and the like, and in particular a tubular casing having a handle with a button controlled firing pin therein and with a cartridge retaining barrel removably mounted on one end whereby the gun is adapted to be held in one hand and fired by drawing the button or trigger rearwardly with the thumb of the hand.

The purpose of this invention is to facilitate carrying tear gas bombs and to provide means whereby a tear gas cartridge may be carried in a pocket, such as a pocket for a fountain pen and wherein the device may readily be removed and fired.

With the conventional method of throwing tear gas bombs through doors, windows, and the like, it is difficult to carry the bombs and because of the inconvenience of carrying bombs of this type tear gas bombs are usually not available when desired. With this thought in mind this invention contemplates a tear gas gun having a tubular housing with button actuated firing instrumentalities therein and with a cartridge retaining barrel removably mounted on one end of the housing whereby the device may be carried like a fountain pen and may readily be removed and fired as desired.

The object of this invention is, therefore, to provide means for forming a tear gas gun whereby the gun may readily be carried in a pocket of a police officer or other person.

Another object of the invention is to provide an improved tear gas gun that is adapted to be held and operated with one hand.

A further object of the invention is to provide an improved tear gas gun that is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a tubular housing having a plug threaded in one end and a barrel threaded in the opposite end, a tubular trigger carrier slidably mounted in the housing and having a button extended through a slot in one side of the housing, a hammer slidably mounted in the trigger carrier, a firing pin slidably mounted in the hammer, springs positioned to actuate the trigger carrier, hammer, and firing pin, and a spring actuated sear providing a key for locking the hammer to the trigger.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a plan view illustrating the improved pen-type tear gas gun.

Figure 2 is a longitudinal section through the gun illustrating the positions of the parts with the firing pin in position to fire the cartridge.

Figure 3 is a longitudinal section through the gun, taken on line 3—3 of Fig. 1 with the parts shown in released positions after firing and with part of the barrel and cartridge broken away.

Figure 4 is a cross section through the gun taken on

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line 4—4 of Fig. 3 showing the sear operating and mounting instrumentalities.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved tear gas gun of this invention includes a tubular housing 10 having a plug or base 11 threaded in one end, a barrel 12 threaded in the opposite end, a cylindrical trigger carrier 13 slidably mounted in the intermediate part of the housing, a hammer 14 having a cylindrical stem 15 positioned with the stem slidably mounted in the trigger carrier, a rod 16 slidably mounted in the hammer and having a firing pin 17 extended from the forward end, a button 18 providing a trigger extended through a slot 19 in one side of the housing and connected to the trigger carrier 13 with a screw 20, a spring 21 for returning the firing pin, a spring 22 for actuating the trigger carrier, a spring 23 for actuating the hammer, and a spring 24 for urging a sear 25 into locking positions for retaining the hammer in the trigger carrier.

The housing 10 is formed with internal threads 26 in one end into which a section 27 of the base 11 is threaded and the opposite end is also provided with internal threads 28 into which the end of the cartridge barrel 12 is threaded. The housing is also provided with a head or partition 29 having an opening 30 therethrough in which the firing pin 17 is positioned and the slot 19 in one side of the housing is formed with a ramp or inclined surface 31 at the inner end whereby upon moving the trigger 18 rearwardly an inclined surface 32 of a projection 33 of the sear rides upwardly on the surface 31 moving the sear from the position shown in Fig. 3 to that shown in Fig. 2 whereby the hammer 14 is released from the trigger carrier. At this time the spring 23 drives the hammer forwardly with the hammer engaging a collar 34 at the intersection of the rod 16 with the firing pin 17 whereby the firing pin is driven into a head 35 of a cartridge as indicated by the numeral 36. The hammer 14 is provided with a recess 37 that is adapted to receive the collar 34 whereby the collar is engaged by the end surface 38 at the base of the recess.

The stem 15 of the hammer is provided with an annular recess 39 into which the sear is adapted to extend, as shown in Fig. 3 and, also as shown in Fig. 3 the sear is slidably mounted in a slot 40 that is positioned to register with the recess 39.

The sear 25 is provided with a pin 41 that extends into an opening 42 in the trigger or button 18 and the spring 24, which is positioned around the stem 41 is positioned in an enlarged recess 43 in the lower part of the button.

The head 44 of the screw 20 is positioned in a recess 45 in the outer end of the button and the intermediate part of the screw extends through an opening 46 which is aligned with the recess 45. The inner end of the screw is threaded into an opening 47 in the trigger carrier 13 whereby the button or trigger is substantially integral with the trigger carrier.

The end of the rod 16, opposite to the end on which the firing pin is positioned, extends into an opening 48 in the base 11. The base 11 is also provided with a knurled surface 49 and a similar knurled surface 50 is provided around the inner end of the barrel 12. A clip 51 may also be provided on the housing for retaining the gun in position in a pocket or the like.

With the parts assembled in this manner the device will be carried with the parts as shown in Fig. 3 wherein the firing pin is freely resting against the end of the cartridge and, with the parts as shown, it will be understood that it will be impossible to accidentally fire the cartridge as it is first necessary to withdraw the firing pin. However, when it is desired to fire the cartridge the button or trigger 18 is drawn rearwardly until the surface 32 of the sear rides

upwardly on the surface 31 whereby the hammer is released and the spring 23 drives the hammer and firing pin against the cartridge. The barrel 12 may then be removed and a new cartridge placed therein.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A tear gas gun comprising a tubular housing, a cartridge retaining barrel removably mounted on one end of the housing, a hammer having a recess in one end thereof and a tubular stem thereon slidably mounted in the housing, a firing pin slidably mounted in the hammer and tubular stem thereof, a collar on one end of said firing pin adapted to enter the recess in said hammer when said hammer is released and said firing pin is positioned in said housing to engage a cartridge in the barrel thereof, means for manually cocking the hammer, and resilient means for driving the hammer against the firing pin to drive the firing pin against the cartridge.

2. A tear gas gun comprising a tubular housing, a cartridge retaining barrel removably mounted on one end of the housing, a hammer having a recess in one end thereof and a tubular stem thereon slidably mounted in the housing, a firing pin slidably mounted in the hammer and tubular stem thereof, a collar on one end of said firing pin adapted to enter the recess in said hammer when said hammer is released and said firing pin is positioned in said housing to engage a cartridge in the barrel thereof, means for manually cocking the hammer, resilient means for driving the hammer against the firing pin to drive the firing pin against the cartridge, and means for resiliently returning the firing pin.

3. A tear gas gun comprising a tubular housing, a cartridge retaining barrel removably mounted on one end of the housing, a trigger extended through a slot on one side of the housing, a trigger carrier slidably mounted in the housing and connected to the trigger, a hammer slidably mounted in the trigger carrier, said hammer having a recess in one end and a tubular stem on the other end, a firing pin slidably mounted in the hammer and the tubular stem thereof and positioned to engage a cartridge positioned in the barrel, a collar on said firing pin receivable in the recess in said hammer, a sear for latching the hammer to the trigger carrier, means for actuating the sear to release the hammer upon movement of the trigger to a firing position, resilient means for actuating the hammer to engage the collar on said firing pin to drive the firing

pin toward the cartridge, and resilient means for actuating the trigger carrier.

4. A tear gas gun comprising a tubular housing, a cartridge retaining barrel removably mounted on one end of the housing, a trigger extended through a slot in one side of the housing, a trigger carrier slidably mounted in the housing and connected to the trigger, a hammer slidably mounted in the trigger carrier, said hammer having a recess in one end and a tubular stem on the other end, a firing pin slidably mounted in the hammer and the tubular stem thereof and positioned to engage a cartridge positioned in the barrel, a collar on said firing pin receivable in the recess in said hammer, a sear for latching the hammer to the trigger carrier, means for actuating the sear to release the hammer upon movement of the trigger to a firing position, resilient means for actuating the hammer to engage the collar on said firing pin to drive the firing pin toward the cartridge, resilient means for actuating the trigger carrier, resilient means for returning the firing pin and resilient means for urging the sear into engagement with the hammer.

5. A tear gas gun comprising a tubular housing, a cartridge retaining barrel removably mounted on one end of the housing, a trigger extended through a slot in one side of the housing, a trigger carrier slidably mounted in the housing and connected to the trigger, a hammer slidably mounted in the trigger carrier, said hammer having a recess in one end and a tubular stem on the other end, a firing pin slidably mounted in the hammer and the tubular stem thereof and positioned to engage a cartridge positioned in the barrel, a collar on said firing pin receivable in the recess in said hammer, a sear for latching the hammer to the trigger carrier, means for actuating the sear to release the hammer upon movement of the trigger to a firing position, resilient means for actuating the hammer to engage the collar on said firing pin to drive the firing pin toward the cartridge, resilient means for actuating the trigger carrier, resilient means for returning the firing pin, resilient means for urging the sear into engagement with the hammer, and a clip on the outer surface of the housing.

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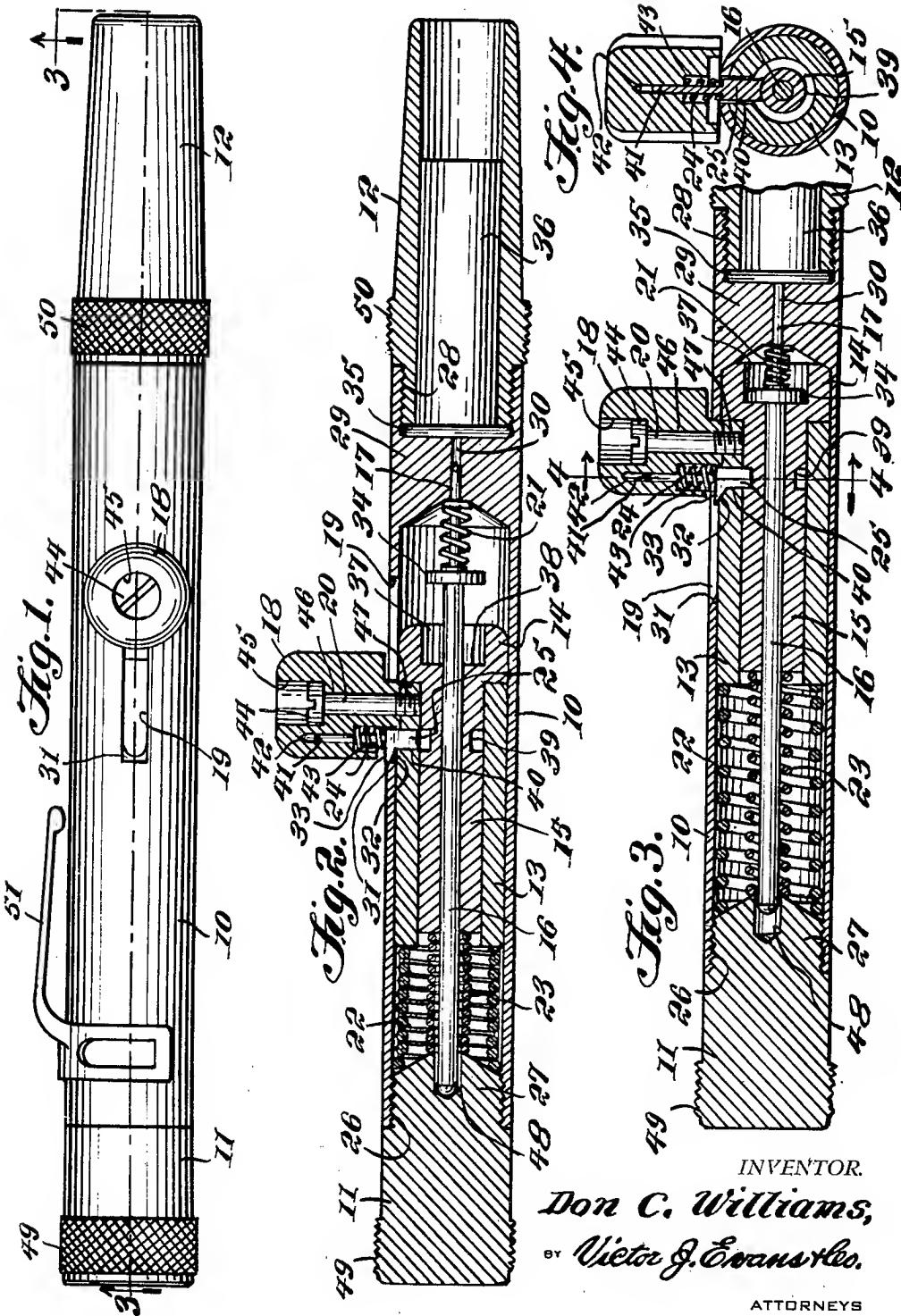
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